



Rethinking Regional Attractiveness in the **Norrbottnen County** of Sweden



REGION
NORRBOTTEN



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Rethinking Regional Attractiveness in the Swedish county of Norrbotten

2023

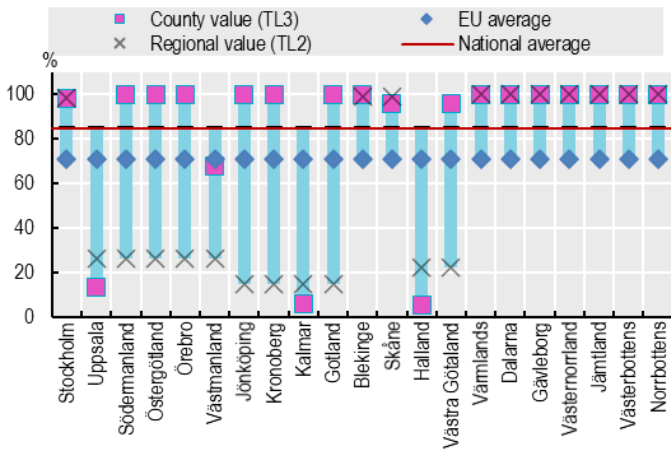


The impact of the COVID-19 crisis, compounded by the consequences of Russia's war of aggression against Ukraine and existing megatrends (e.g. climate change, globalisation, digitalisation and demographic change), continue to produce asymmetric effects within and between countries and regions, with the scope and scale depending on their unique characteristics.

The OECD's work on Rethinking regional attractiveness policies in the new global environment, is undertaken with the support of the European Commission (DG REGIO) and is a priority activity of the Regional Development Policy Committee (RDPC). Working closely with 15 regions in 5 OECD member countries (Ireland, Italy, Portugal, Spain and Sweden), it aims to help regional and national policy-makers to better understand the position of regions in an evolving global context, including emerging challenges and opportunities, and identify the policy levers at their disposal to enhance the attractiveness of regions to the key international target groups of investors (including exporters), talent, and visitors. In doing so, it seeks to support regions transition towards new territorial development policies that promote inclusive, sustainable, and resilient development, while enhancing regional attractiveness.

4 | A snapshot of Norrbotten in the World¹

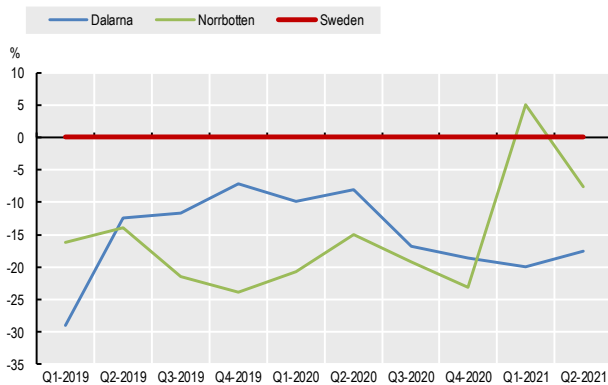
Share of renewables in electricity generation



Source: OECD Environmental database (2019); OECD regions (TL3)

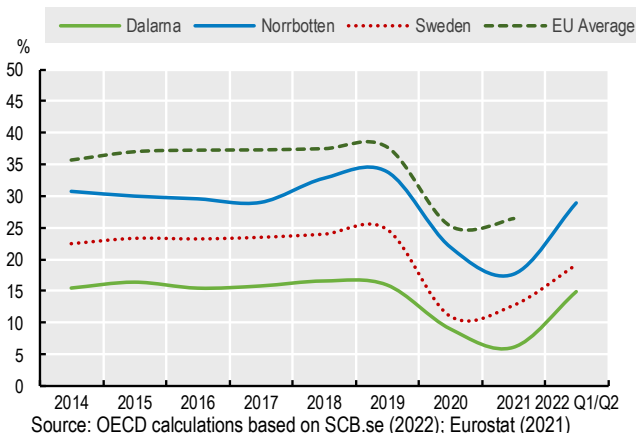
RETHINKING REGIONAL ATTRACTIVENESS IN THE NORRBOTTEN COUNTY OF SWEDEN © OECD 2023

Download speed as a percentage of deviation from national average



Source: OECD calculations based on Ookla database; 2021; OECD TL3 regions

Share of nights spent by foreign tourists in accommodation establishments



Source: OECD calculations based on SCB.se (2022); Eurostat (2021)

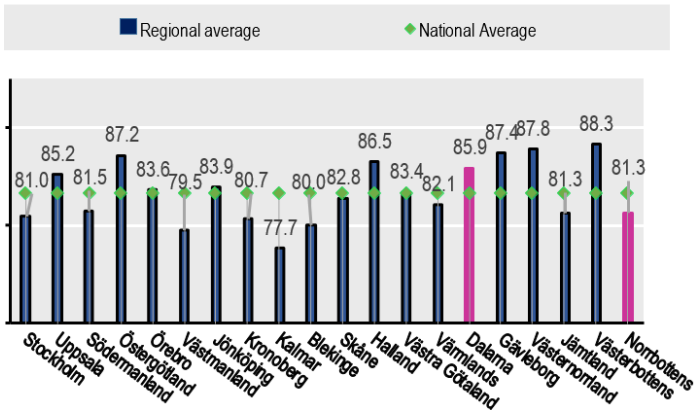
On the clean electricity production front, Norrbotten is a key player with an entirely fossil-fuel free production due to decades of continuous investment in hydro and wind power installations. Europe's largest single-site onshore wind installation to date – owned by Chinese, American and German investors – should begin operations in 2024 in Piteå and further expand the municipality's and county's existing fossil-free electric production. While Sweden has one of the lowest electricity prices in Europe, Northern Sweden has the lowest in the country and the most stable electricity grids in the world. As the world strives to achieve a swift green transition and fossil fuel prices prove increasingly volatile and drivers of inflation, cheap clean energy is a unique pull factor for international firms that want to green their production, especially for energy-intensive ones. However, the closure of reactors (e.g. in Germany and Sweden) and gas shortages due to the war in Ukraine also negatively affect Northern Sweden's electricity prices, and increase the risk of shortages.

Regarding digitalisation, Norrbotten can improve. In terms of download speeds, despite a sudden improvement early 2021 followed by a sharp decrease, the county is consistently below the national average. Moreover, Norrbotten is one of the two Swedish counties where fixed broadband coverage is below 95%, with a 93.9% coverage. In comparison, the EU coverage is of 97.9% (European Commission, 2022^[1]). As in most OECD countries, the regional result veils great disparities in internet access between municipalities. With less than 75% of rural households with access to fixed broadband, Norrbotten is below the Swedish (80.6%) and EU (91.5%) scores (idem). This is the case because private operators rely on cost-benefit analysis to decide where to expand internet coverage and thus neglect sparsely populated areas. In this context, the European Regional Development Fund supports the expansion of high capacity broadband in those areas. Good access to high-speed internet is a key factor to attract talent (remote workers) – investors and visitors.

Before the pandemic, Norrbotten was experiencing a significant increase in the share of overnight stays by foreign visitors, rising from 28% to 34% between 2017 and 2019, which represented a higher increase than for Sweden, and just below that for the EU. As for most regions in Europe and around the world, this share fell significantly over the pandemic years, but is showing a very promising rebound since Q2 2021. The top three international source markets are Germany, Norway and Finland. At the same time, the COVID-19 crisis travel restrictions led many Swedes to visit the North, which mitigated the drop in overnight stays and number of flight connections, currently essential for a region hard to reach by the land.

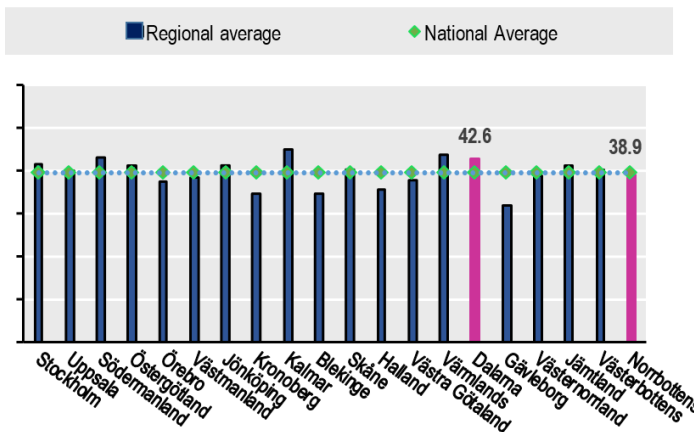
¹ Data are provided in this section are at the TL3/NUTS3 level which, except for some dimensions, limits international comparison on regional indicators today mainly available at TL2/NUTS 2 level.

Share of inhabitants satisfied with the range of cafes and restaurants in their municipalities (%)



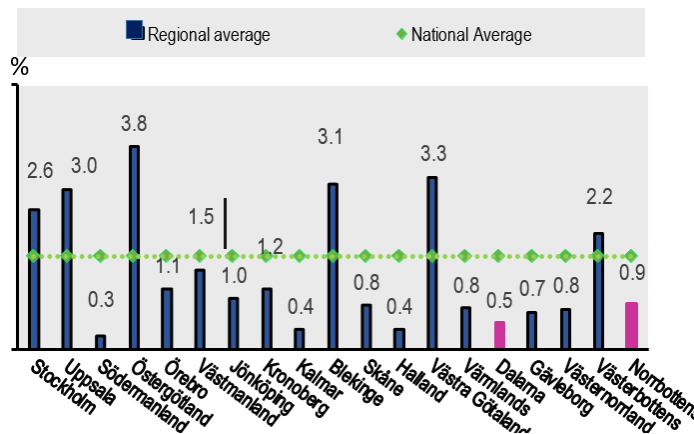
Note: Gotland and Jämtland do not appear because of missing data
Source: Swedish Statistical Database, 2021

Share of population that have high trust in their municipal politicians (%)



Note: Gotland does not appear because of missing data
Source: Swedish Statistical Database, 2021

Share of employees working in the R&D sector



Note: Gotland and Jämtland do not appear because of missing data
Source: Swedish Statistical Database, 2021

Meeting places are an essential determinant of individual and community well-being (Algan, Clément and Claudia, 2020^[2]), and thus of places' capacity to attract and retain people. Norrbotten scores below the national average in terms of the share of locals satisfied with the range of cafes and restaurants in their municipalities. In addition, 82% of those aged between 18 and 29 years old are unsatisfied with the range of places available to meet and socialise with friends (e.g. leisure centres, youth clubs) (Statistics Sweden, 2021^[3]). The long distances between most municipalities mean inhabitants cannot fall back on services offered in towns 'next door'.

In Norrbotten, trust in municipal politicians is on par with the national average, while is below that of the OECD (46.9%). Low levels of trust can have serious implications for the attractiveness of places, as trust is crucial to ensure the success of a wide range of policies that depend on behavioural responses from the public such as compliance with public health responses or with the tax system. In the longer term, trust will help governments tackle societal challenges such as climate change, ageing populations, and changing labour markets. Improving citizen satisfaction with local public services (notably education and healthcare) can help regain trust, especially in rural areas widely affected by steep drops in trust in last decades (Mitsch, Lee and Ralph Morrow, 2021^[4]), but this requires adequate financial means for municipalities and the Region.

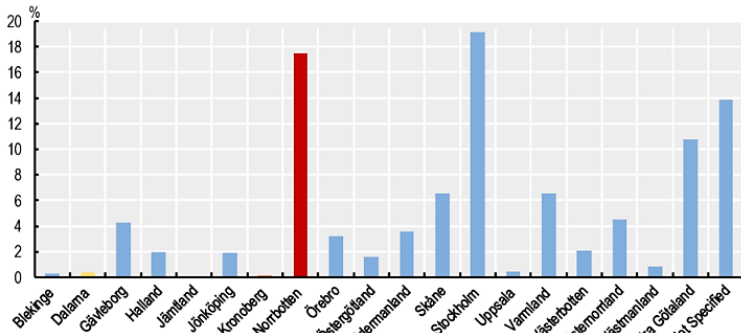
The share of employees working in the R&D sector is below the average for Sweden. Partly because high starting salaries, job security, and other advantages offered by traditional industries in the region reduce the incentive to innovate. Nevertheless, while the sparse population structure and long distances do not facilitate collaboration between innovation stakeholders, the county has still developed special competencies and innovation networks in sectors such as arctic, mining, mineral and forestry (Luleå University of Technology has a focus on wood research), and space technologies with internationally renowned actors such as the governmental rocket range and research centre Esrange Space Centre. This notably results in high numbers of co-publications relative to EU regions, and good public investments. The county's R&D score must be weighed against the fact Sweden ranks as the most innovative country in the EU according to the 2022 EU Regional Innovation Scoreboard.

6 | **Attractiveness profile: Norrbotten**

Norrbotten is defined by considerable economic growth opportunities interlinked with a range of pressing challenges. The county is in good position to attract investors and visitors in the short to middle term, in particular thanks to cheap and stable renewable energy, good cooperation structures between dynamic politicians, industrials, academics and start-ups, and access to natural amenities. Attracting and retaining talent, however, is a real challenge due to low availability or access to certain goods and services that determine the quality of the living environment such as education and health, or a vibrant cultural offer. Yet a lack of workers endangers local businesses' growth, puts pressure on public services, and reduces municipalities' tax-base. Attracting and retaining talent will condition the territory's development and has therefore become the priority for all local actors.

The OECD considers four families of international connections in order to understand the position of regions in the world: **business** (e.g. Foreign Direct Investment projects (FDI), trade, employment in foreign-controlled business, etc.), **human** (employment, migration, and visitors), **knowledge** (international students, R&D, patents), and **infrastructure** (broadband, ports, airports, road and rail). Big opportunities and challenges lie with the very high levels of FDI Norrbotten is experiencing due to its rapid "green" reindustrialisation.

Swedish FDI by country of destination for the period 2018 - 2022

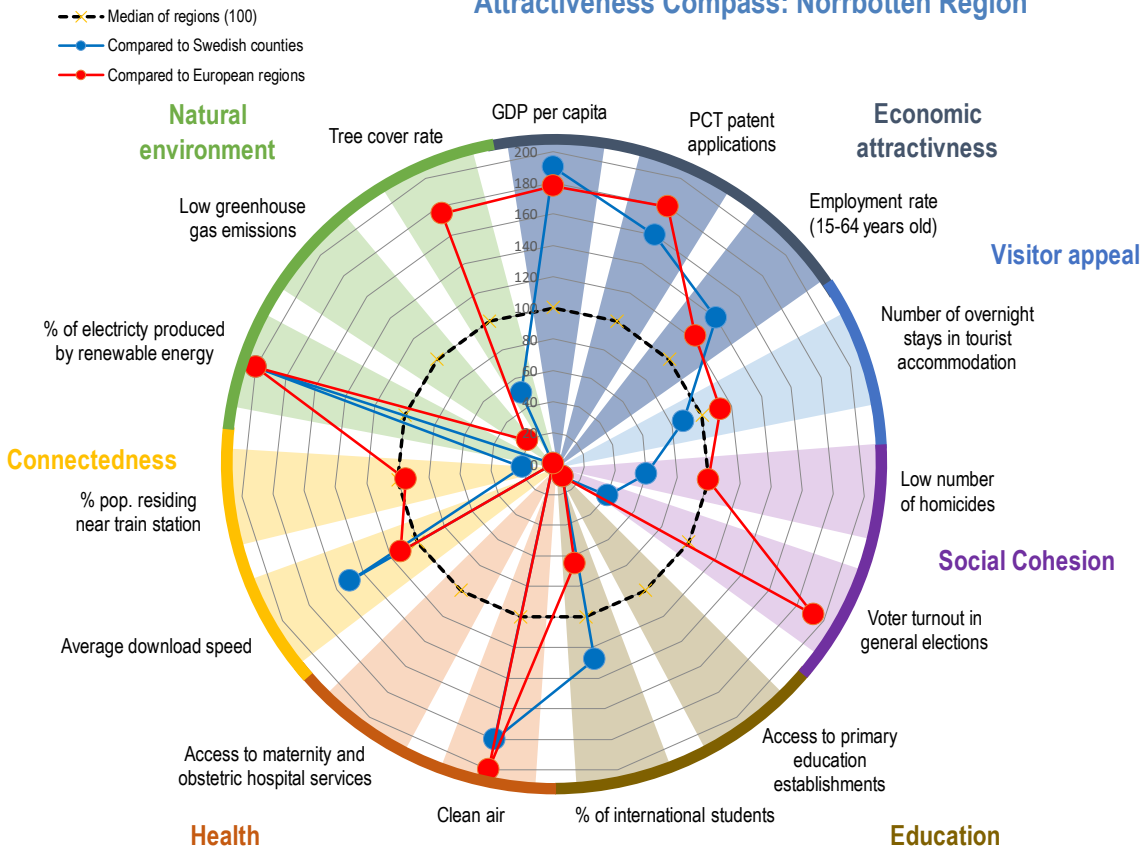


Note: Counties for which FDI represents < 0.5% of Swedish FDI are excluded from the graph
Source: OECD calculations based on FT markets data, 2022

Between 2018 and 2022, it received 17% of all FDI entering Sweden, behind only Stockholm. Due to a large 2021 investment from Fertiberia to finance the first large-scale green and emission-free ammonia & fertiliser plant in Sweden, FDI are heavily focused on the chemicals sector (over 60% of the total). Renewable energy projects come next (20% of the total). The very energy-intensive chemical and metal industries are highly dependent on the price and stability of energy, two areas in which Norrbotten outperforms most EU regions. The availability of land, proximity to raw materials and electrical infrastructure, and well-established industrial traditions also contribute to Norrbotten's attractiveness to investors.

The OECD's innovative and multidimensional approach to assessing **regional attractiveness** considers global engagement beyond international connections and financial drivers alone. In total, the methodology considers more than 50 indicators to develop regional attractiveness profiles, covering 14 dimensions of attractiveness, across six domains (Economic attraction, Connectedness, Visitor appeal, Natural Environment, Resident well-being, and Land-use and Housing).

Attractiveness Compass: Norrbotten Region



Compass interpretation:

- Scale from 0-200 (200 represents the region with the best performance; 100 represents the median)
- The median for the EU and the Country is represented by the same black dashed line (100).

Source: OECD database on Measuring the Attractiveness of Regions; all statistics from the OECD Regional Database unless otherwise noted.

Economic Attractiveness. During the 2000-2019 period, Norrbotten's per-capita GDP doubled to among the highest in Europe. The nature-based economy, i.e. mineral assets and forestry resources, combined with a unique energy infrastructure, are the backbone of the county's economic success. The discovery in early 2023 in Kiruna municipality of the largest rare earth metals deposit in Europe should contribute to continued growth. Norrbotten is an increasingly innovative region, and demonstrated by the number of Patent Cooperation Treaty (PCT) applications, which is higher than Swedish and European averages. This illustrates how rural regions, by definition less populated, hold an R&D&I advantage of limiting knowledge spill-overs associated with proximity, which can compromise the secrecy of emerging intellectual or scientific breakthroughs (OECD, forthcoming^[5]). In parallel, high reliance on mining activities and relatively low unemployment hamper the creation of new businesses, with fewer created per 1000 inhabitants than the national average (10.3 vs 13.2 in 2021) (Regionfakta, 2022^[6]). Norrbotten is not immune to the gender imbalances experienced in many OECD regions: in 2021, fewer new businesses were created and managed by women in comparison to the national average (Regionfakta, 2022^[7]). The geographical concentration of private and public investments (industrial projects, internet coverage, roads, etc.) in some territories, notably coastal ones, prevents all communities from benefiting equally from the economic push. Overall, the economic activity of Norrbotten is concentrated in few industries and firms. The company landscape is made of either very large (top 3 firms employ between 1800 and 4500 people) or very small firms with less than 10 employees (which combined account for 90 % of the total). The government owned mining company LKAB represented 44% of Norrbotten companies' total 2021 sales (Statista, 2021^[8]). This makes the local economy more vulnerable to shocks and volatile than neighbouring counties (OECD, 2021^[9]).

Visitor Appeal. In the last decade, the tourism sector has grown quickly in Norrbotten, even if the county is behind Swedish median in terms of number of overnight stays. With extensive unspoiled landscapes and a vibrant Sámi culture, the region has the necessary assets for increased revenue growth and innovation without necessarily having to grow tourist numbers much. Indeed, nature and experience-based tourism is the most rapidly expanding type of tourism across Europe and elsewhere (Nordregio, 2020^[10]), especially among youth. This growing demand aligns well with Norrbotten's existing natural and cultural strengths and provides significant opportunities to leverage the county's attractiveness in these areas.

Connectedness. Norrbotten represents a quarter of Sweden's surface but only 2.5 % of its population. This results in the region having the smallest population density in the country: 2.6 inhabitants per km², against an average of 109 inhabitant per km² in European Union. Locals therefore need good and functioning transport and digital infrastructures to bridge or compensate for the expansive geographical distances. Yet, Norrbotten has the smallest share of inhabitants with good access to train stations in the country and scores below the European average. Moreover, especially in inland areas, public transport is insufficient, spots without coverage remain and the rail network is not extensive. While 93% of urban residents are within a kilometre of public-transport, this figure drops to 25% for those residing in non-urban areas (Statistics Sweden, 2021^[11]). As a result, Norrbotten ranks 3rd in counties with the most cars per capita (Regionfakta, 2022^[12]), which in a context of fuel price volatility and climate change awareness, is increasingly unsustainable. In addition, because of the industrial nature of the local economy, in some places, the road system is crowded with numerous heavy goods lorries restricting the mobility of locals.

Health and Education. Residents tend to be very far from primary schools compared to other EU and Swedish counties, and 2nd furthest in Sweden from secondary schools. The county offers the lowest access to maternity and obstetric hospital services in the EU and in Sweden, and the lowest number of doctors per capita in the country. Nurses are one profession facing the huge shortages, and with the largest retirements expected in coming years (49% during the 2015 – 2030 period) (Ejdemo and Karolina, 2018^[13]).

Social cohesion. Since county and municipal council elections occur simultaneously with national general elections, the incentive to vote is higher than in most EU regions, however, Norrbotten scores under the national average for voter turnout. This is a concern for sustainable and inclusive development and attractiveness because low turnout often means low participation by less privileged citizens (Lijphart, 1998^[14]) and can in the longer-term result in mistrust of the political process. On average, homicides are extremely rare although slightly more frequent than in the rest of Sweden and on par with the EU median. Overall, Norrbotten residents feel safe, although women feel less safe than men on average (Statistics Sweden, 2021^[15]). Overall, the perceived quality of the living environment varies from one municipality to another. There is thus a 38 percentage point difference between the localities with the highest and lowest share of residents that would recommend their municipality as a good place to settle (Statistics Sweden, 2021^[16]).

Natural Environment. On the transport front, Norrbotten produces far more greenhouse gas emissions than the EU and national averages. At the same time, it offers a good tree coverage and very good air quality compared to other the average of EU regions. Nevertheless, among its forestland only 31% is unproductive and this share decreased by 9% since 2010 (Statistics Sweden, 2021^[17]). This has negative implications for biodiversity and carbon emissions, and could harm long-term attractiveness to talent and visitors. It illustrates inevitable land-use trade-offs that deserve attention.

Global megatrends and crises have different impacts between and within countries. These asymmetric effects risk accentuating existing territorial attractiveness inequalities, and reinforce the need for place-based policies recognising regions' varied and unique characteristics. **Demographic and climate change are two megatrends particularly challenging for Norrbotten.** In response, the county and its local actors have implemented innovative multi-actor and multi-level policies such as the *North Sweden Green Deal* or the smaller-scale Hej Hemby project that can inspire territories facing similar challenges. Besides, the COVID-19 crisis and its consequences reinforced the prevalence of some attractiveness factors related to the quality of life. Coupled with the expansion of teleworking in some sectors, it opens new possibilities for less dense areas, but requires digital and transport infrastructures.

Together with Västerbotten, Norrbotten is defined as Sweden's Arctic territory, and as such, is experiencing the most rapid climate change and its associated impacts (International Science Council, 2021^[18]). By 2100, the annual average temperature in the county is expected to increase by between 3.5 and 6.5 degrees Celsius, and the annual average precipitation by 20 – 40% (Norrbotten County Administrative Board, 2019^[19]). One particular area of concern is that **climate change and mitigation measures** threaten the preservation of culture and traditional livelihoods of the indigenous Sámi population. The warming climate for instance leads to replacement of lichen, reindeers' main food source, by moss (OECD, 2019^[20]), while the development of wind energy projects has adverse impacts on reindeer husbandry, in particular by reducing the availability of grazing land and access to migratory paths because of roads built to service the projects (Cambou, 2020^[21]). An additional concern is that, vanishing arctic landscapes could reduce the attractiveness of the region to visitors.

The Climate and Energy Strategy 2020-2024 (2019^[19]), developed by Norrbotten's County administrative board, County Council and municipalities, replicates Sweden's ambitious environmental goals. It is a real challenge as the county is the 2nd largest contributor of greenhouse gases in Sweden (about 15% of total emissions) and well above the EU average, partly due to mining and steel industries (Regionfakta, 2022^[22]). Given their significant contribution to economic growth and employment, whether directly (10.7% of jobs, up to 20% in Kiruna municipality (Regionfakta, 2021^[23])) or indirectly, and the fact that these activities play a major role in ensuring a stable supply of key industrial inputs in Europe, the focus is on investing to transform these industries instead of closing them. This strategy is leading to a strong attraction of domestic and foreign investors and to the creation of both high-skilled and low-skilled jobs to support coal-free steel mills (e.g. HYBRIT, expected to reduce Sweden's CO₂ emissions by 10%), mega battery initiatives (Northvolt), and green fertilizer and biofuel factories. The massive increase in fossil-free electricity production required by these new industrial projects is a growing socio-economic challenge. New large-scale wind farms are part of the solution, but will need to be implemented taking into consideration the potential impacts on key stakeholder groups such as the Sámi.

Increasing demographic decline is of high concern for regional OECD policy makers given its significant socio-economic implications for places. Coupled with low tertiary education levels, very low unemployment and low attraction of newcomers, demographic decline can disrupt the supply of skills and labour. By 2050, 57% of OECD small regions for which data is available are expected to lose population (OECD, 2019^[24]). Due to an ageing population, low fertility rates and out-migration, Norrbotten is no exception. It experienced the largest population drop (-5.6%) among Swedish counties between 1990 and 2021, with rural communities shrinking the most. During this period, only two of the 14 municipalities (Piteå and Luleå) experienced population growth, while some lost more than 20% of their population. **By 2040, the county population is expected to drop by 5.2% compared with 2021.** As a result, recruiting and retaining qualified workers has been an ongoing problem for public and private employers who identify this issue as the factor most affecting their growth (Örtqvist, 2018^[25]).

In light of the new investments in Northern Sweden, recruitment needs will only intensify. Up to 100,000 job openings are expected by 2035, increasing the population by 20%: a quarter in new industries (from contractors to engineers), the rest in the public sector, retail and hospitality (shops, cafes, etc.). Given northern Sweden has the country's lowest unemployment, people from outside will be needed to fill these jobs. Private and public actors are thus developing proactive plans to attract workers, with a particular focus on talent from abroad. Many understand that **to achieve reverse migration, providing quality jobs is not enough. Norrbotten must become a place where people want to work, live and play.**

Contrary to the practice in countries such as Italy, Spain, Portugal and many Nordic countries, the national government in Sweden has to date no explicit goal to revert population decline in remote areas, nor to attract talent (beyond entrepreneurs)². In response to this lack of national missions, mandates and activities related to talent attraction, several regional actors have developed their own solutions and activities – what many describe as a waste of resources and a risk of dispersion that could disorient the target group (Andersson, 2022^[43]). Northern Sweden has launched its own attractiveness pilot project, the *North Sweden Green Deal*, to ensure that re-industrialisation is accompanied by a real societal transformation with new residents moving to the north (**Error! Reference source not found.**). Municipalities like Gällivare and Övertorneå are launching territorial marketing campaigns, while Piteå has since 2022 a relocation service in cooperation with businesses, civil society, housing agencies and educational providers, through which 80 new residents have already moved to the city. Norrbotten businesses have also joined forces to address labour gaps, in particular through the 2019 T25 project. This project aims to attract 25,000 skilled workers to Norrbotten and Västerbotten over 5 years, notably by securing employment for spouses of recruited and by increasing graduate retention – to date, only one in three students from Luleå University stays in the labour market area after graduation.

A particular issue yet to be addressed is the gender-skewed outward migration, in particular among young adults from smallest localities, which could become a development bottleneck. Norrbotten is already the county with the lowest proportion of women in small towns such as Jokkmokk, Arvidsjaur and Arjeplog, close to two-thirds of the population aged 20 to 24 are men (Statistics Sweden, 2022^[26]).

Box.1. The North Sweden Green Deal

An innovative multi-actor governance system to meet future labour demands

Responding to the need for a highly reactive coordination platform, the North Sweden Green Deal brings together 20 key regional actors: Region Norrbotten, Norrbotten County Board, Norrbotten 14 municipalities, Luleå Technological University, Swedish Lapland Visitors Board, Region Västerbotten and Skellefteå municipality.

The project core goal is to attract and retain talent to the North through territorial marketing simultaneously with capacity building in municipalities. It helps local actors develop a shared understanding of future labour demands. Municipalities need to plan for expected industry demands in terms of energy and infrastructure but also skills. The project pools and supports emerging initiatives in marketing and capacity building. Activities must be completed by July 2023. Successful examples include:

- *International talent spotting through AI-technology:* using the database of Norrbotten's destination management and marketing organisation, Swedish Lapland Visitors Board, to target potential immigrants interested in living the regions Arctic life style.
- *Capacity building* together with all Norrbotten municipalities concerning individual action plans for attraction and marketing activities.

The project's total budget is EUR 10.6 million: 54% of which goes to Norrbotten, 46% to Västerbotten. The Swedish Government funds half of Norrbotten's budget through regional 1:1 financing. Skellefteå Municipality funds about 40% of Västerbotten's budget, and the Swedish Government true 12%. The European Regional Development Fund finances the reminder.

Source: <https://utvecklanorrbotten.se/projektstod/north-sweden-green-deal/>

Lack of housing availability is a major issue in several of the county's municipalities for both existing and new residents. Places that have recently attracted large investments will need to offer new workers places to live, including rental options, which will in particular provide the necessary flexibility for foreign talent who are planning to settle in Norrbotten temporarily. Small houses³ to rent are in particular in short supply, with none built between 2017 and 2019, and only 13 in 2020/21 (Statistics Sweden, 2021^[27]). To meet the housing shortage challenge in a context where building new housing is difficult, Hej Hemby, a development project between Pajala and Övertorneå municipalities, and funded by Norrbotten's County Council and County Administrative Board, is successfully increasing the local housing market's liquidity by getting houses on the open market through free-of-charge support to owners, buyers and renters. In terms of urbanism, more can be done to consider women's perspectives in city planning decisions, as is the case in Glasgow City Council, Scotland (which involves developing more streetlights, more toilets, wider pavements to cater for prams and wheelchairs, etc.).

²Few strategies like the Swedish National Strategy for Sustainable Regional Development in the Entire Country 2021-2030 adopted in 2021 nevertheless note that demographic challenges occur, and mention talent attraction as an objective, but that does not translate into concrete missions and mandates (with some exceptions for entrepreneurs).

³Small houses are defined as detached one- and two-dwelling houses as well as semi-detached, terraced and chain houses (excluding holiday homes).

The upcoming North Bothnia railway, co-financed by the EU, will **fill important gaps in relation to transport, by improving freight corridors and enhancing the mobility of residents** between the coastal cities of Umeå and Luleå. Nevertheless great challenges remain, in particular in inland areas. Given the number of major industrial projects and national climate change mitigation targets, the government is evaluating the need for further transport investments (Gløersen, 2022^[28]), in great demand by local politicians. It will explore the extent to which private investors could co-finance the development of transport infrastructure.

Enhancing multi-level governance and coordination mechanisms

Norrbottnen's strong collaboration structures between public authorities, businesses, and higher education institutions, are powerful levers to enhance the territory's attractiveness to talent, visitors and investors. At the same time, as different departments and levels of government are responsible for related competences, taking steps to improve coordination mechanisms, in particular among municipalities, could help to address existing challenges.

Thanks to its ties with local private and public actors and well-developed project-coordination competences, **Luleå University of Technology (LTU) is central to the county's sustainable growth and development**. Thanks to strong formal interaction channels with local firms, **LTU participates in local skill supply and development, as well as to innovation in the private and public sectors**. First, applied courses linked to specific activities of local industries such as the Space Technology and Science programme are offered to students, in close cooperation with concerned firms. LTU also carries out high-level research in close cooperation with concerned firms. It is notably among the Shanghai Ranking's **50 best** Universities for mining and mineral engineering. For example, the **ReMine project** explores how to decrease the amount of harmful wastes and recover metals and minerals. Geographic proximity offered by shared research labs facilitates networking and informal interactions between university and industry researchers. Second, through close ties and formal dialogues with local authorities and civil society, LTU research and evaluation capacities' improve local development plans and bring real benefits for local communities.

Box 2. Improving the quality of rural living environments through pilot testing

The purpose of the Digital Services in Villages (Digiby) project, is to develop and test distance-bridging digital solutions to offer better access to services in Norrbotten sparsely populated areas. Following a pre-study period with focus groups used to determine digitalisation needs, pilots were launched among which:

- Hybrid stores that allow customers to make purchases outside of staffed times thanks to electronic locks and digital payments have opened.
- In order to improve access to care for villagers living far from the health centre, a mobile care service was set up in a van driven by a nurse. Appointments are made by calling the nearest health centre.
- In collaboration with a local library, the bus driving around the county to offers books now also provides IT support and advice.
- In Pajala, a work hub with workstations, conference equipment, a kitchen and common areas has opened for short and long-term rental. Accommodation can be rented in the same building. The municipality participates by providing technical equipment, workstations, a service point for locals, and marketing efforts to make the service visible to foreigners. Workstations are reserved for municipal staff so that the hub increases Pajala's attractiveness as an employer, a place to work remotely or launch a business.

These projects are promising in terms of increasing attractiveness and retention of people. LTU's Centre for Bridging Distance Technology owns the project and carries out pilots with Norrbotten villages and regional players such as Region Norrbotten. The project is mainly financed by the EAFRD and will end in 2022.

Source: [Om projektet | DigiBy](#)

The Digiby project (Box 2) illustrates the rural living lab approach, which engages individuals in their role as inhabitants and end-users, part of a trend in many OECD rural places to go beyond innovation focused on developing cutting-edge science and technology, and rather seek to improve production processes, business models or social and institutional innovations that are not uniquely profit-driven and help tackle large societal challenges. To this end, the Emilia Romagna region in Italy has included *Responsible research and innovation* (RRI) as a principle in its regional strategy for research and innovation. It means innovation

players and stakeholders become mutually responsible to ensure results of research and innovation enter the real world are aligned with objectives related to sustainability.

Whereas some **inter-municipal cooperation (IMC)** exists, primarily among those in close geographical proximity, others are left out. Yet, it can help address the consequent investment gaps faced by many. Indeed, to accompany the rapid economic development and improvements to well-being, several Norrbotten municipalities need new infrastructure investments - broadband, roads, railways etc. - public services and cultural amenities. However, investments are lagging, in part because many municipalities face funding shortfalls in a context where returns on investments are uncertain. By helping to share risks and costs, inter-municipal cooperation can facilitate the provision of joint services, permit economies of scale, ensure investment at an efficient scale, and avoid fragmentation of investment projects (OECD, 2022^[29]).

Compared with municipal mergers, IMC agreements are relatively easy to set up and can mitigate skills shortages by enabling the pooling of staff expertise in specific domains. When including small municipalities with scarce public resources, they help foster territorial cohesion. Many OECD countries have recently passed regulations to encourage IMCs on a voluntary basis. For instance, France offers special grants and a special tax regime, Estonia and Norway provide additional funds for joint public investments, while Slovenia reimburses 50% of staff costs of joint management bodies, and Galicia in Spain prioritises investment projects that involve several municipalities (OECD, 2021^[30]). Given IMC agreements come with administrative and financial costs as well as transparency and democratic challenges, Norrbotten municipalities could start by focusing on precise issues such as the construction of the much-needed international school, and perhaps with the support of the private sector, in the form of a Public Private Partnership (PPP). To respond to the growing number of international families moving to Boden because of the expansion of the H2 Green Steel Industry, the municipality announced early 2023 the opening of an International Education Program for students aged 6 to 19. Finally, as central and subnational governments share responsibility for infrastructure investment, mechanisms to support cooperation across levels of government will also be important (OECD, forthcoming).

Sweden is a unitary, decentralised, and deconcentrated country. Over the past two decades, a growing number of responsibilities were transferred to County councils (CCs), which are elected regional governments responsible for organising health and social services for citizens. In 2017, Norrbotten CC acquired regional development responsibilities including regional growth policy, transport, infrastructure, culture, skills development, and tourism from Norrbotten County administrative board (CAB), which represents the central government at the regional level. Thus, the elaboration and adoption of the first regional development strategy by the CC is quite recent. **Better information sharing and alignment of objectives between the CC and the CAB, and between the latter and the national government** would ensure the specific conditions and needs of Norrbotten are better mirrored by investment plans and strategies, EU funds included. In particular, it is necessary to better align the political time with the economic one so as not to miss important windows of opportunities. Nevertheless, national actors still developed some actions to encourage people to support the North. In 2020, the government appointed a “coordinator for social change around major company establishments and company expansions in Norrbotten and Västerbotten”, tasked with bringing together actors from different sectors and geographic levels, private companies, representatives of the civil society (Gløersen, 2022^[28]). Public employment offices across the country are promoting the opportunities offered in Norrbotten to be at the forefront of the shift to a more sustainable future, and a scheme called *Relocate* partly funded by the EU Social Fund was launched to attract long-term unemployed people from Stockholm, Gothenburg and Malmö regions.

Sweden’s 2021 national strategy for Tourism acknowledges that sustainable development and resilience requires strong local roots, which is facilitated if the local community is considered and treated as a key stakeholder. Norrbotten is one county where the **local tourism industry has matured towards increased collaboration** under the Swedish Lapland Visitors Board’s management, in particular in the area of joint product development. To ensure the sector’s smooth and inclusive development, Swedish Lapland could monitor residents’ sentiment toward tourism, as done in Kyoto, Japan. There, a survey explores perceptions of tourist numbers, the quality of Kyoto as a destination, seasonality, potential improvements in inclusiveness of tourism (e.g. changes in relevance of new demographics, young people), etc. (OECD, 2021^[31]). Furthermore, strong links among local actors can be leveraged to promote a local green tourism recovery. For instance, Swedish Lapland could help build carbon literacy across local actors to encourage action and identify new solutions. Examples of such an approach include Malta, where the Ministry of Tourism, in partnership with SUNx (Strong Universal Network), is working to accelerate climate action through the development of a capacity building diploma in climate-friendly travel for the next generation of tourism-climate ambassadors. While in New Zealand, the Tourism Industry Aotearoa Association Carbon Challenge urges tourism businesses to measure their carbon footprint, take action to significantly reduce carbon emissions by 2030 and contribute to a tourism sector that is net zero carbon ahead of New Zealand’s 2050 goal (OECD, 2022^[32]).

The following policy considerations are intended to help policy makers to enhance the impact of attractiveness strategies of Norrbotten county vis-à-vis investors, talent, and visitors.

- Improve the number and diversity of social life opportunities in Norrbotten to boost wellbeing, sense of belonging, retention of people as well as attractiveness to visitors.** Besides cafés and restaurants, new cultural hubs would make a difference, in particular for attracting and retaining women – who tend to have higher levels of cultural participation than men (Schmutz, Stearns and Glennie, 2016^[33])– and youth. Currently, sport, leisure and entertainment organisations are overrepresented in comparison to those providing artistic and cultural activities, and entertainment (a ratio of 1 to 6.7 in 2007 (Norrbotten, 2007^[34])). Norrbotten CC and municipalities share responsibility for culture and can take joint-action. In the absence of private players candidates for public support, investments in public bumping places such as cultural and association centres can serve as an alternative. In any case, international experiences underline projects' planning should involve communities to allow best improvements in wellbeing outcomes (What Works Centre for Wellbeing, 2021^[35]).
- Favour FDI that fosters territorial attractiveness to ensure long-term sustainable development.** A diversification of economic activities is needed to enhance the stability of Norrbotten's economy. Promoting investments in sectors with positive externalities on attractiveness can be a game changer. Investments in cultural and creative industries would improve the quality of life for residents and thus help to attract and retain talent. Likewise, favouring investment in sustainable tourism will ensure long-term attractiveness to visitors and open-up employment options attractive to women. FDI in sectors seeking to address climate change challenges will strengthen the county's overall resilience and attractiveness. Sectors identified by Norrbotten's EU Smart Specialisation strategy can also help identify strategic sector: arctic test-beds, energy technology, space technology, cultural and creative industries, and tourism (European Commission, 2019^[36]).
- Address tourism seasonality to enhance attractiveness of employment in the sector and reduce societal and environmental pressures during peak periods.** Seasonal differences are high in Norrbotten. In the winter, the arctic climate limits tourism activities in the far north, whereas in the summer, the midnight sun is a further attraction. In terms of attractiveness, year-round tourism will enable tourism business to offer more stable jobs and thus hire and retain staff more easily. It may also reduce societal and environmental pressures during peak seasons for the benefits of local inhabitants' well-being. Some places like Holstebro in Denmark tackle seasonality by extending the existing season at both ends. Others target new tourist seasons outside the usual peak months by betting on new products or new target groups. Thus, the Somme valley cycle route, built from scratch (with the help of the EU EAFRD) along a river in the eponymous French department highlights the natural, cultural and historical sites (First World War) of the territory as well as its hotels and restaurants. Besides, the Finnish region of South Savo aims to target school camps more.
- Increase access and use of mobile and broadband connections.** Norrbotten has the lowest level of mobile coverage throughout the country, with only 71.6 % of its territory covered in 2018, and uneven access to internet. As commercial actors are responsible for delivering broadband in Sweden, the challenging economic case for delivering such services in sparsely populated areas, often means these communities are neglected. Consequently, these areas largely depend on European (through the ERDF) and state support, which often requires collaborations not easily achieved between the state, commercial actors, and individuals. Yet, high digital coverage is a prerequisite for attracting talent, visitors and investments. Digitalisation reduces distances, both physical, economic and social, within the county and with other parts of the world. Good internet access can foster access to health and education services today hardly reachable (figure 1) through telemedicine or online classes. It would also enable Norrbotten to better promote itself as a remote working hub for people looking for more space and access to nature, better attract tourists, and enable rural areas to develop their own solutions.
- More effectively include Sámi reindeer herders in spatial planning to address conflicts around land use and economic development.** In the absence of legislation, the quality of relations between the Sámi and Norrbotten CAB, municipalities and businesses vary considerably. Yet tensions linked to the expansion of the tourism, forestry, mining and housing sectors are numerous. Formal consultation platforms for private and public actors and the Sámi to exchange are needed as well as formal guidance on who exactly businesses and municipalities should consult in Sámi communities about new projects, and what type of information to provide them with. This is all the more important as new Swedish and foreign firms and talent are locating in the North and might be unaware of Sámi society and livelihoods. The CAB should engage with reindeer herders to support awareness building and cultural training for industrials, tourism operators and tourists themselves. Thus, to mitigate the negative impact of increased year-long tourism in the Kittelfjäll village on reindeer herders (Vasterbotten

county), the local tourism agency developed in dialogue with the Sámi village information material for tourists to understand the Sámi reindeer herding year. The project is funded by the EU LEADER fund. Increased mutual trust would foster locals' well-being and reduce uncertainty for investors. Moreover, Norrbotten could focus on attracting guests that will contribute to local communities' well-being like done by Destination Canada's new strategy that prioritises tourists who value nature, engage with locals, among which Indigenous people, are less time-sensitive, and eager to explore lesser-known areas and engage in cultural exchanges.

- **Explore how to better ensure that the economic value produced in Norrbotten benefits the county.** In Sweden, municipalities and regions have a constitutional right to levy taxes, which are crucial for carrying out their remit. However, the local government income tax base is calculated on the incomes of people registered as residing in the municipality. This tax is proportional and differs from one municipality to another because each chooses its own rate. The average rate is of 32.24 % (OECD, 2022^[37]). In Norrbotten, given rising automatisations, and the fact that some companies facing recruitment challenges opt to hire fly-in fly-out workers registered as residents of other localities, only a small part of the economic value produced in the county goes to the local authorities, which nevertheless need financial means to invest in the infrastructures and services that will make them more attractive. Solutions to be discussed between national and sub-national levels could include the introduction of a regional royalty or tax on the exploitation of natural resources, or an increase in the tax on corporate income and gains. Relative to the OECD average, the tax structure in Sweden is currently notably characterised by a lower proportion of revenues from taxes on corporate income & gains (OECD, 2022^[38]).

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